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PATENT ABSTRACTS OF JAPAN

(11)Publication number : 05-208371A

(43)Date of publication of application : 20.08.1993

(51)Int.Cl.

B24D 3/00

B24D 18/00

(21)Application number : 04-054486

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(22)Date of filing : 29.01.1992

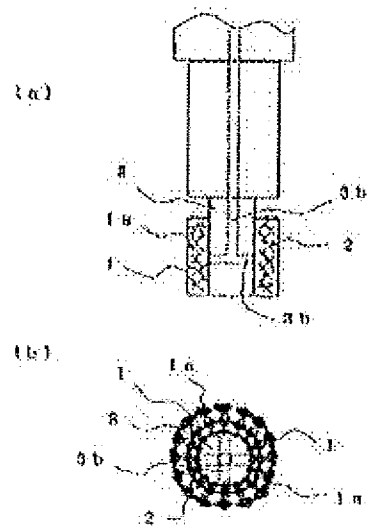
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(54) MANUFACTURE OF GRINDING TOOL

(57)Abstract:

PURPOSE: To reform so that it may perform highly accurate working at high speed by elevating the tenacity of abrasive grains, and increasing service life, and improving the elimination of chips.

CONSTITUTION: Abrasive grains 2 are fixed, ranging from inside of porous holes to the surface, to a tube 1 being made in multilayer and porous by weaving, braiding, and unweaving out of fibers of carbon, glass, ceramic, thermosetting resin, metal, or the like. The fixing is performed by electric plating, electroless plating, vapor-phase plating of PVD or CVD, or fusion by a laser. The grinding member consisting of the tube 1, where this abrasive grains 2 are fixed, is fixed to the shank 3, and in the shank 3, a coolant supply hole, at the center shaft, and an opening 3b, at the engaging part of the tube 1, are made, thus coolant can be jetted out of the hole 1a of the porous tube.



Detailed Description of the Invention:

[0007]

3 denotes a shank which fixes and supports the grinding member formed of the tube 1 to which the abrasive grains 2 are fixedly attached, and the tube 1 is fitted and fixed into a leading end of the shank 3. For the fixation, fixation by an adhesive, pressure bonding, fastening by a fastening band, fixation with a screw, and other mechanical fixation are adopted. A supply hole 3a for a cooling liquid, air, and the like is formed at a central axis of the shank 3, and an opening 3b communicating in a cross pattern is formed in the fitting part of the tube 1 at the leading end of the shank 3. A supplied liquid passes therethrough to be jetted into grinding gaps through porous holes 1a of the tube.

[0015]

In Figure 6, a shank 33 having a concave-convex surface is provided at a grinding leading end, and a porous tube 14 to which abrasive grains are fixedly attached is fitted into the concave-convex part and is compressed from the outside to be fastened and fixed to the concave-convex part. With this structure, a bonding strength between the shank 33 and the porous tube 14 is high, so that the shank 33 and the porous tube 14 are not separated from each other during the processing, to thereby enable stable processing. It should be noted that the porous tube and the grinding member formed of the abrasive grains fixedly attached thereto can be formed into an arbitrary shape in addition to those in the above-mentioned embodiments.